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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,427	03/29/2004	Gerald Burt Kliman	RD-28,364-3	9782
6147 7590 09/05/2007 GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			EXAMINER CAZAN, LIVIUS RADU	
			ART UNIT 3729	PAPER NUMBER
			MAIL DATE 09/05/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/810,427

Applicant(s)

KLIMAN ET AL.

Examiner

Livius R. Cazan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 25-33 is/are pending in the application.
- 4a) Of the above claim(s) 25-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 6/12/2007 has been fully considered and made of record.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 4, and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidrich (US20020149282) in view of Mischler (US4266684 to Mischler et al.).

Heidrich discloses (with reference to Fig. 1) positioning pre-wound stator windings (11) around respective teeth (7) of a laminated stator yoke (1) by radially sliding the windings over the respective teeth. The stator teeth include key notches (see figure below). The pre-wound coils are positioned on the stator teeth by means of a mandrel aligned with the slots of the stator, the coils being pushed onto the teeth and fixed on the stator teeth (see col. 2, para. [0018]) prior to attaching tooth tips (15) to the teeth.

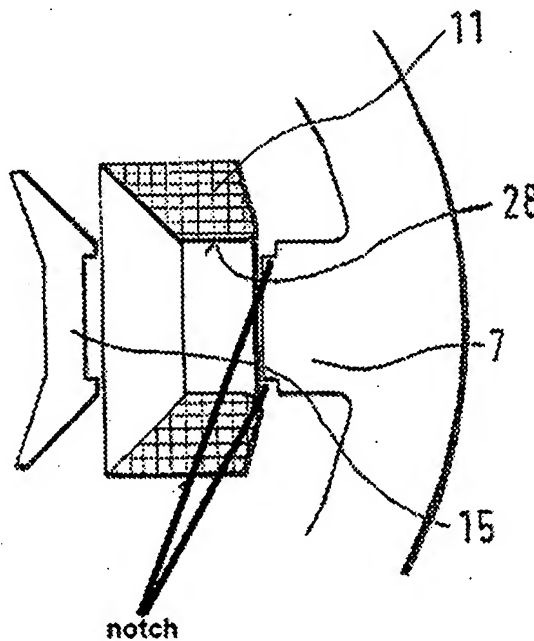
Heidrich does not disclose forming the tooth tips by directly molding them into contact with a first end of the teeth, the molding comprising injection molding.

Mischler teaches forming tooth tips on the teeth of a stator by directly injection molding (col. 2, Ins. 64-66; col. 3, Ins. 40-45) them onto the teeth. This is done after having positioned pre-wound windings onto the stator teeth. Mischler also discloses that

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complex pole face or airgap geometries are easily produced in molded material (col. 3, lns. 66-68).

In view of the teachings of Mischler, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the tooth tips of Heidrich by directly molding them onto the tooth tips. One of ordinary skill in the art would have been motivated to do so in order to simplify the manufacturing process by reducing the number of manufacturing steps, i.e. instead of first forming the tooth tips and then bonding them to the teeth, the tooth tips can be formed and bonded in the same operation.



3. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Heidrich and Mischler as applied to claim 1 above, in view of Applicant's admitted prior art (APA).

Heidrich and Mischler disclose the same invention as the Applicant, but do not specifically discuss annealing the laminated stator yoke.

APA teaches that it is conventional to anneal the laminated stator yoke (page 1, para. [0002]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to anneal the laminated stator of Heidrich and Mischler, in view of the teachings of APA, in order to produce a laminated stator core by the conventional method.

4. **Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidrich and Mischler as applied to claim 1 above, in view of Crabb (US3862492).

Heidrich and Mischler disclose the same invention as the Applicant, except for providing insulation around at least portions of the windings, the insulation comprising slot liners, and the providing being done prior to molding.

Crabb teaches that it is known to employ slot liners (15, Fig. 1) prior to providing a winding on the teeth.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the slots of Heidrich and Mischler with insulating liners, so as to prevent an exposed part of the winding to come into contact with the stator core, this being done prior to molding, since teeth are molded after the windings have been installed.

5. **Claims 11-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidrich and Mischler as applied to claim 1 above, in view of Kliman (US6274962), with "Compression Molding" being used as extrinsic evidence.

Regarding claim 11, Heidrich and Mischler disclose the same invention as the Applicant, including forming the tooth tips by injection molding.

Mischler does not disclose compression molding the composite tooth tips.

Compression molding is an alternate form of molding, and it would clearly be a suitable replacement for the injection process disclosed by Heidrich and Mischler. Applicant's disclosure is in agreement with this assertion, since Applicant claims both the injection molding and the compression molding processes. Kliman teaches the use of compression molding to form molded teeth on a stator (see abstract) and it is therefore clear that it is known to use compression molding in manufacturing stators.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Heidrich and Mischler by utilizing compression molding instead of injection molding, in view of the teachings of Kliman, since compression molding is an art recognized equivalent process for injection molding.

Regarding claim 12, Heidrich teaches attaching pre-fabricated tooth tips to teeth of a stator, the windings having a shape selected to facilitate a tight fit with the tooth tip (see Fig. 1 for example). Clearly, such coils have a shape that facilitates fabrication of a desired tooth tip shape during molding, such that the tooth tips press against the coils, fixing them on the stator poles.

Regarding claims 13 and 14, as it is known in the art, the mold used for compression molding must be hollow, the material to be compressed being placed in the mold and pressed so as to take the shape of the mold (see "Compression Molding"

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for definition of this process). In the instant case, in order to produce the tooth tips as discussed with respect to claims 11 and 12, the material clearly has to be pressed against the teeth and against the coils surrounding the teeth. This will therefore mold the tips and compress the coils at the same time.

Regarding claim 15, Heidrich and Mischler disclose molding the tooth tips from magnetic particles in a suitable binder (see col. 3, Ins. 30-45 of Mischler), these particles being the material in the hollow mold as discussed above, and are therefore compressed against the stator yoke.

Response to Arguments

6. Applicant's arguments with respect to claim 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Livius R. Cazan whose telephone number is (571) 272-8032. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LRC/ 8/22/2007



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